



Earth Day

Actions that contribute to the health and safety of life on Earth.

April 22, 2021

There is an urgent need for initiatives that will help protect the environment and safeguard life on this planet. As scientists, ICFOians are equipped to put their knowledge and ingenuity to work to make the world a cleaner and safer place.

A number of research groups at ICFO are working on frontier research that will have a positive impact on the environment. For example, researchers in the Functional Optoelectronic Nanomaterials led by ICREA Prof at ICFO Dr Gerasimos Konstantatos seek to develop quantum dots for use in photovoltaic applications, while researchers in the Organic Nanostructured Photovoltaics group led by UPC Prof at ICFO Dr Jordi Martorell are working towards a sunlight-powered photoelectrochemical cell able to generate fuels from CO₂. The Molecular Nanophotonics group led by ICREA Prof at ICFO Dr Niek van Hulst aims to investigate energy transfer at the nanoscale in order to understand artificial photosynthesis, converting light, CO₂ and water to carbohydrates & oxygen. In addition, two new group leaders Professors Georgia Papadakis and Pelayo Garcia de Arquer join ICFO this year with

research interests with applications in renewable and clean energies.

Many research groups at our institute generate knowledge and advances that will one day offer innovative solutions to environmental challenges, while some technologies are already bringing the value of research *made* at ICFO directly to society through spin-offs that have incubated in the ICFO Launchpad. An excellent example is Sixsenso, a company that spun-out of ICFO in 2020 to commercialize research advances from the Optoelectronics group led by ICREA Prof at ICFO Dr Valerio Pruneri, offering solutions for early detection of biological contamination to monitor water quality.

ICFOians also participate in and coordinate European projects with explicit clean energy goals. In the [LESGO](#) project, coordinated by Prof Martorell, researchers are working towards an affordable and green supply of electrical power on demand by storing energy in the carbon-hydrogen bond of reduced graphene oxide. In [OptOlogic](#), coordinated by ICREA Prof at ICFO Dr Jens Biegert, a European consortium of researchers is developing a new class of quantum devices that increase the efficiency of electronic circuits in order to save energy.

At ICFO we believe that we have both an opportunity and a responsibility to contribute to the well-being of society and the planet. We all have something to contribute to the EARTH DAY Movement, not just on April 22nd, but throughout the year.

Happy Earth Day 2021!